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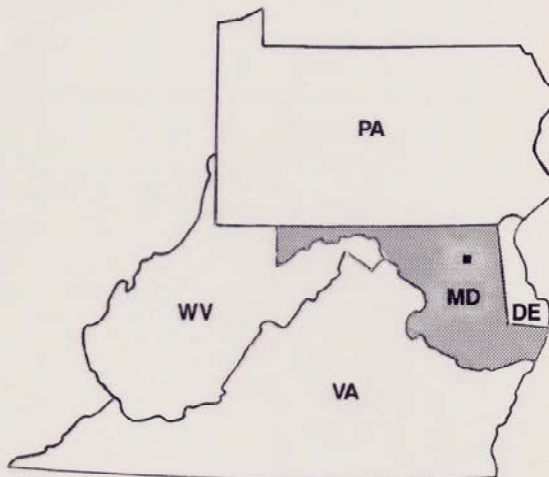
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Research and Development



# AERIAL PHOTOGRAPHIC ANALYSIS COLGATE PAY DUMP SITE Baltimore, Maryland

EPA Region 3



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AERIAL PHOTOGRAPHIC ANALYSIS  
COLGATE PAY DUMP SITE

Baltimore, Maryland

by

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Contract No. 68-D-00-267

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#### ABSTRACT

This report presents findings from an analysis of aerial photographs of the Colgate Pay Dump site located in Baltimore, Maryland. The analysis covers 11 selected dates of aerial photographs spanning 60 years from 1938 through 1998. The photographs include black-and-white and color infrared film. The purpose of this analysis is to provide operational remote sensing support to remedial site investigations for Region 3 of the U.S. Environmental Protection Agency under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The analysis of aerial photographs is needed to document landscape morphology, patterns of hazardous waste disposal, and other observable activities and conditions of environmental significance at this Superfund site.

The Colgate Pay Dump received commercial and industrial wastes from 1946 until 1971 when the land was acquired by the State for construction of Interstate Route 95. Prior to the construction, waste materials from the dump were consolidated into five large, capped mounds adjacent to the roadway. Subsequent recreational use of the mounds as off-road trails and erosion of the steep slopes caused waste drums and debris to be exposed, presenting potential hazards to the public and resulting in contamination of nearby surface waters (EPA, 2000).

Findings from this analysis indicate that in 1938 and 1947 the site was primarily undeveloped wetlands. From 1953 to 1971, solid waste disposal activities were evident and appeared to be associated with an industrial facility located directly north of the site. By 1973 construction of Interstate Route 95 obscured much of the site. From 1973 to 1998 a large mound of material was noted on the site, along with four additional mounds located outside the eastern site boundary.



The U.S. Environmental Protection Agency (EPA), Environmental Sciences Division, Landscape Ecology Branch in Las Vegas, Nevada, prepared this report for the EPA Region 3 Hazardous Waste Management Division in Philadelphia, Pennsylvania, and the EPA Office of Emergency and Remedial Response in Washington, D.C.

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## INTRODUCTION

This report presents findings from an analysis of aerial photographs of the Colgate Pay Dump site (CERCLIS ID# MDD980918379, SSID# 0322) located in Baltimore, Maryland (Figures 1 and 2). The analysis includes 11 selected dates of aerial photographs spanning 60 years: 1938, 1947, 1953, 1957, 1964, 1966, 1969, 1971, 1973, 1981, and 1998. The photographs include black-and-white and color infrared film. The purpose of this analysis is to provide operational remote sensing support to remedial site investigations for Region 3 of the U.S. Environmental Protection Agency (EPA). These investigations were conducted under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The analysis of aerial photographs is needed to document landscape morphology, patterns of hazardous waste disposal, and other observable activities and conditions of environmental significance at this Superfund site.

The Colgate Pay Dump received commercial and industrial wastes from 1946 until 1971 when the land was acquired by the State for construction of Interstate Route 95. Prior to the construction, waste materials from the dump were consolidated into five large, capped mounds adjacent to the roadway. Subsequent recreational use of the mounds as off-road trails and erosion of the steep slopes caused waste drums and debris to be exposed, presenting potential hazards to the public and resulting in contamination of nearby surface waters (EPA, 2000). Additional information about the site size, drainage, and location adjacent to the 68th Street Dump site is given in the Photographic Analysis section.

Findings from this analysis indicate that in 1938 and 1947 the site was primarily undeveloped wetlands. From 1953 through 1971, solid waste disposal activities were evident and appeared to be associated with an industrial facility located directly north of the site. By 1973 construction of Interstate Route 95 obscured much of the site. From 1973 to 1998, a large mound of material was noted on the site, along with four additional mounds located outside the eastern site boundary.

A Glossary, defining features or conditions identified in this report, follows the Photographic Analysis section. Sources for all maps, aerial photographs, and collateral data used in the production of this report are listed in the References section. A list of all aerial photographs that were identified and evaluated for potential application to this study can be obtained by contacting the EPA Work Assignment Manager. Historical aerial photographs used in the analysis of this site have been digitally scanned and printed for use in this report. A transparent overlay with interpretative data is affixed to each of the digital prints. See the Methodology section for a discussion of the scanning and printing procedures.

The U.S. Environmental Protection Agency, Environmental Sciences Division, Landscape Ecology Branch in Las Vegas, Nevada, prepared this report for the EPA Region 3 Hazardous Waste Management Division in Philadelphia, Pennsylvania, and the EPA Office of Emergency and Remedial Response in Washington, D.C.



Figure 1. Study area location map, Maryland (USGS, 1972). Approximate scale 1:2,500,000.



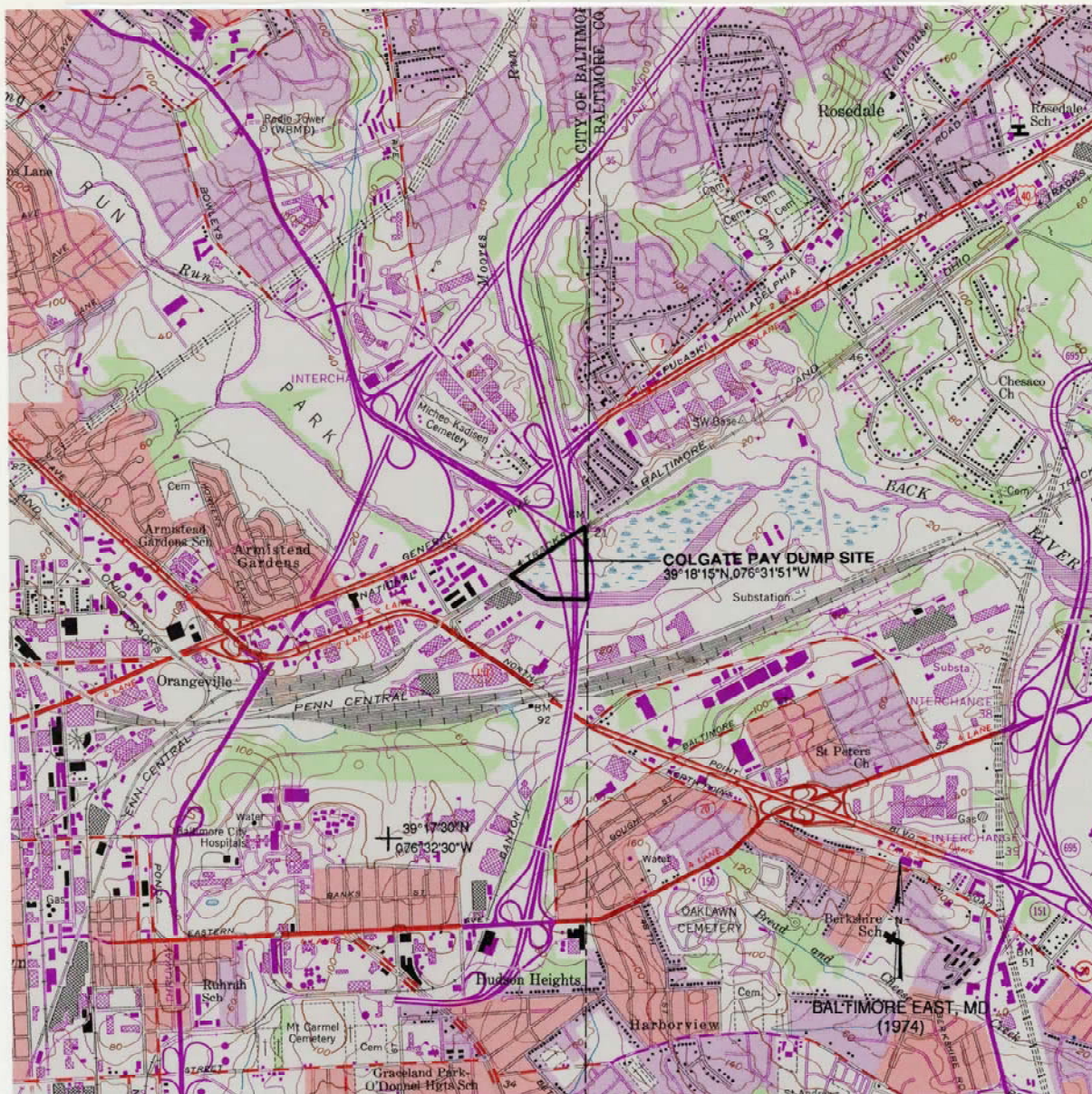


Figure 2. Local study area location map, Baltimore East, Maryland (USGS, 1974). Scale 1:24,000.



## METHODOLOGY

This report was prepared using a standard methodology that includes the following steps:

- data identification and acquisition,
- photographic analysis and interpretation, and
- graphics and text preparation.

These steps are described below. Subsections also address details related to specific kinds of analyses that may be required to identify environmental features such as surface drainage and wetlands. All operational steps and processes used to perform this work (including data identification and acquisition, photographic analysis and interpretation, and graphics and text preparation) adhere to strict QA/QC guidelines and standard operating procedures (SOPs). These guidelines and procedures are documented in the Master Quality Assurance Project Plan (QAPP) prepared for Remote Sensing Support Services Contract No. 68-D-00-267 (LMS, 2000).

Data identification and acquisition included a search of government and commercial sources of historical aerial film for the study area. Photographs with optimal spatial and temporal resolution and image quality were identified for acquisition. In addition, U.S. Geological Survey (USGS) topographic maps were obtained to show the study area location and to provide geographic and topographic context.

To conduct this analysis, the analyst examined diapositives (transparencies) of historical aerial photographs showing the study area. Diapositives are most often used for analysis instead of prints because the diapositives have superior photographic resolution. They show minute details of significant environmental features that may not be discernible on a paper print.

A photographic analyst uses a stereoscope to view adjacent, overlapping pairs of diapositives on a backlit light table. In most cases, the stereoscope

is capable of various magnifications up to 60 power. Stereoscopic viewing involves using the principle of parallax (observing a feature from slightly different positions) to observe a three-dimensional representation of the area of interest. The stereoscope enhances the photo interpretation process by allowing the analyst to observe vertical as well as horizontal spatial relationships of natural and cultural features.

The process of photographic analysis involves the visual examination and comparison of many components of the photographic image. These components include shadow, tone, color, texture, shape, size, pattern, and landscape context of individual elements of a photograph. The photo analyst identifies objects, features, and "signatures" associated with specific environmental conditions or events. The term "signature" refers to a combination of components or characteristics that indicate a specific object, condition, or pattern of environmental significance. The academic and professional training, photo interpretation experience gained through repetitive observations of similar features or activities, and deductive logic of the analyst as well as background information from collateral sources (e.g., site maps, geologic reports, soil surveys) are critical factors employed in the photographic analysis.

The analyst records the results of the analysis by using a standard set of annotations and terminology to identify objects and features observed on the diapositives. Significant findings are annotated on overlays attached to the photographic or computer-reproduced prints in the report and discussed in the accompanying text. Annotations that are self-explanatory may not be discussed in the text. The annotations are defined in the legend that accompanies each print and in the text when first used.

Objects and features are identified in the graphics and text according to the analyst's degree of confidence in the evidence. A distinction is made between certain, probable, and possible identifications. When the analyst believes the identification is unmistakable (certain), no qualifier is used. Probable is used when a limited number of discernible characteristics allow the analyst to be reasonably sure of a particular identification. Possible is used when only a few characteristics are discernible, and the analyst can only infer an identification.

The prints in this report have been reproduced, either by photographic or computer methods, from the original film. Reproductions are made from the original film and may be either contact (the same size) prints or enlargements, depending on the scale of the original film. Any computer-produced prints used in this report are generated from scans of the film at approximately 1,300 dots per inch (dpi) and printed at 720 dpi. Although the reproductions allow effective display of the interpretive annotations, they may have less photographic resolution than the original film. Therefore, some of the objects and features identified in the original image and described in the text may not be as clearly discernible on the prints in this report.

Study area boundaries shown in this report were determined from aerial photographs or collateral data and do not denote legal property lines or ownership.

#### Surface Drainage

The surface drainage analysis produced for this report identifies the direction and potential path that a liquid spill or surface runoff would follow based on the topography of the terrain and the presence of discernible obstacles to surface flow. The analyst determines the direction of surface drainage by stereoscopic analysis of the aerial photographs and by examining USGS topographic maps. Site-specific surface drainage patterns are annotated on the map or photo overlay. Where the direction of subtle drainage cannot be determined, an indeterminate drainage line symbol is used. Regional surface flow is ascertained from the USGS topographic maps.



## PHOTOGRAPHIC ANALYSIS

This report presents findings from an analysis of aerial photographs of the Colgate Pay Dump site located on the eastern margin of the city of Baltimore, Maryland (Figure 2). The site boundaries used in this report were determined from collateral information supplied by U.S. EPA Region 3 in conjunction with observations made from the quadrangle map. The areal extent of the Colgate Pay Dump site is approximately 8.7 hectares (21.4 acres).

Features referenced in background or collateral material are cited in the text of this analysis. When they are first mentioned in the text, these features are denoted with an asterisk (\*). They are also marked with an asterisk each time they appear on the photographs. Features are annotated but not discussed unless observations significant to the objectives of this analysis are noted. In a previous report (EPA, 1997, Project Number TS-PIC-97033328, Aerial Photographic Analysis: 68th Street Dump, Baltimore County, Maryland), the western portion of the 68th Street Dump site (CERCLIS ID# MDD980918387) included the area which is identified in this report as the Colgate Pay Dump site. Also in the previous report, two areas (annotated as A and B) were identified in the western portion of the 68th Street Dump site. In this report, these two features are identified as two waste disposal areas (annotated as WDA-A and WDA-B), where WDA-A is located primarily within the bounds of the Colgate Pay Dump site and WDA-B is located primarily within the bounds of the adjacent 68th Street Dump site (see Figure 5).

The Colgate Pay Dump site is located in a wetlands area and natural drainage on the site trends primarily to the southeast. Two drainageways (Herring Run and Moores Run\*) are located near the site and both flow southward and eastward to the Back River, which drains into Chesapeake Bay. The western and southern boundaries of the site run along the indeterminate northern bank of Herring Run. Two railways located near the site are referred to in the text as the northern and the southern railway, respectively. The northern site boundary runs along the northern railway. Throughout the period of analysis,



industrial facilities located near the site (annotated as Facility-1 through Facility-11) and residences located northeast of the site are annotated on all figures, but are only discussed the first year they appear and when a significant change occurs.

APRIL 23, 1938 (FIGURE 3)

The site is primarily comprised of undeveloped wetland vegetation (WV). A mound with disturbed ground (DG) is located in the northwestern corner of the site. An area with possible dark-toned material (DTM) is located in the southwestern portion of the site. A possible vehicle outside the eastern site boundary is near an unpaved road (annotated vehicle access\*) which extends across the northern railway.

At Facility-1 the unpaved road forks into two branches. The northeastern branch of the trail extends to the General Pulaski Highway, passing an area of probable fill material (FL) with a flat ground surface that appears both graded and partially vegetated. The southwestern branch of the trail runs near two probable derelict stacks and north of an area with dark-toned standing liquid (DTSL). It then passes north of an extensive accumulation of probable fill material with a stained ground surface (ST), a possible vertical tank (VT), an excavation (EX) containing vehicle tracks and an area with dark-toned material, and a main building (B). A probable incinerator stack is present along the eastern side of the main building. The area with dark-toned standing liquid is located at the toe of the extensive accumulation of probable fill material and is possibly leachate.

Locations for three additional facilities (Facility-2, Facility-3, and Facility-4) in various stages of development are identified west of the site. Facility-2 is essentially undeveloped at this time, while Facility-3 includes a main building and a water tower. Facility-4 is comprised of several structures (not annotated) along North Point Boulevard. Drainage from Facility-3 and Facility-4 trends downhill to the northeast toward an unbounded, level area on the southern bank of Herring Run.

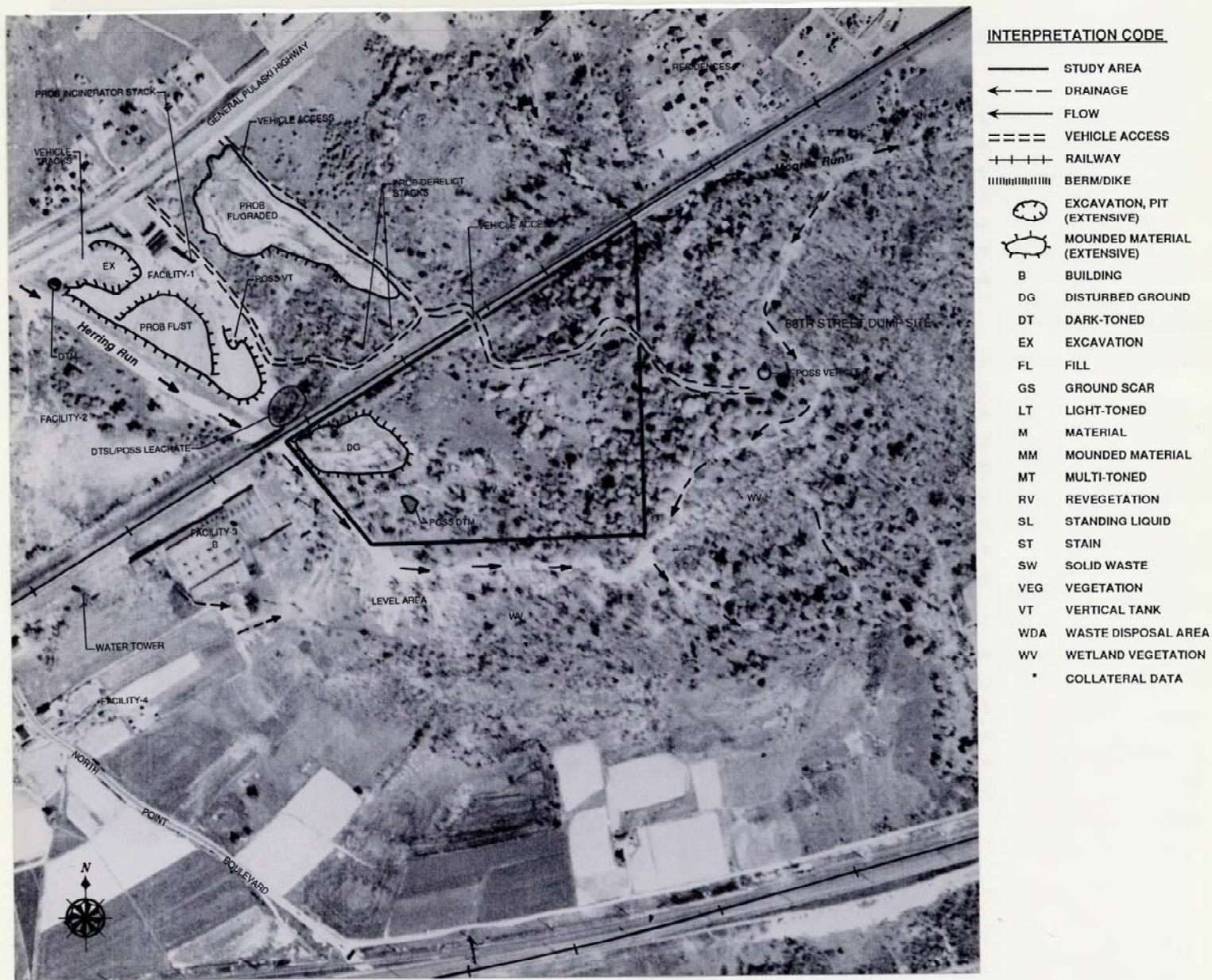


Figure 3. Colgate Pay Dump site, April 23, 1938. Approximate scale 1:4,460.



OCTOBER 21, 1947 (FIGURE 4)

The site remains undeveloped and vegetation canopy obscures some of the features observed in 1938. The southwestern portion of the disturbed ground mound appears to have slumped downhill into Herring Run. A dashed line represents the former southwestern boundary of the mound (1938). Areas of light-toned material (LTM) are visible on the revegetated (RV) surface of the mound. In the southern portion of the site, the formerly observed possible dark-toned material is not visible. Southwest of the site, North Point Boulevard has been improved.

Off-site, the probable derelict stacks observed in 1938 have been removed, and the possible vertical tank is not visible at Facility-1. The "probable" qualifier is removed from the incinerator stack, where smoke emissions are now visible. East of the main building along the northeastern branch of the trail, the probable fill area has been covered by vegetation (VEG). West of the main building along the southwestern branch of the trail, the formerly observed excavation and vehicle tracks appear to have been filled over and the surface of the stained, probable fill material is covered with vegetation. A new, rectangular excavation area is located on the northwestern side of this probable fill material.

At Facility-2 an unbounded area of probable construction activity is noted. At Facility-3 an area with disturbed ground is located along the bank of Herring Run. A main building has been installed at Facility-4. A new facility (Facility-5) includes an accumulation of probable fill next to the northwestern side of the main building. A rail spur from the southern railway extends to Facility-5.

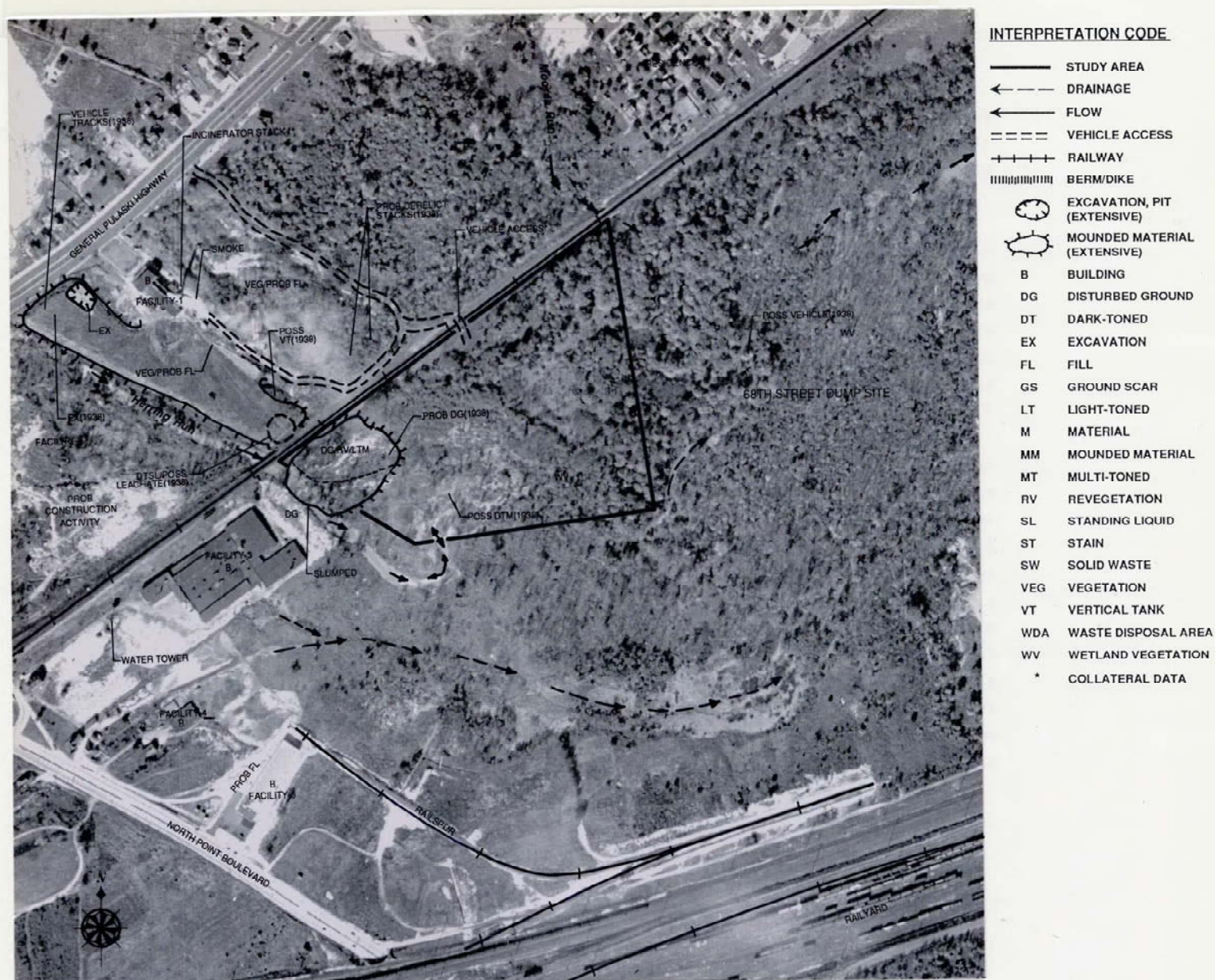


Figure 4. Colgate Pay Dump site, October 21, 1947. Approximate scale 1:5,450.



FEBRUARY 14, 1953 (FIGURE 5)

The western portion of the disturbed ground mound appears to have revegetated and the previously observed areas of light-toned material are not visible. The eastern portion of the disturbed ground mound has merged with a waste disposal area (WDA-A) where active dumping is evident.

At a waste disposal area (WDA-B) in the adjacent 68th Street Dump site, dumping is also seen and includes a stained area for burning solid waste. Both of these waste disposal areas are comprised of graded, stained fill material and scattered solid waste (SW). Areas with light-toned materials are noted within the eastern and the southern site boundaries. Unpaved vehicle access roads are present between the Colgate Pay Dump site, the 68th Street Dump site, and Facility-1.

Vehicles are parked at the former (1947) location of an excavation observed at Facility-1. East of the main building, signs of erosion are visible. West and south of the main building, extensive excavations, numerous vehicles, and two possible vertical tanks are observed. To the west, Facility-2 has been more fully developed. At Facility-3 the water tower has been removed and the area of disturbed ground along Herring Run has been replaced by a linear accumulation of probable fill material. A large accumulation of fill material and possible solid waste is located along the northern side of Facility-4. Level fill material has been added along the northern and eastern sides of the main building at Facility-5. There is an area of probable construction activity alongside the main building. The railspur from the southern railway does not appear to extend beyond this area of construction activity. To the southeast, a new facility (Facility-6) is identified.



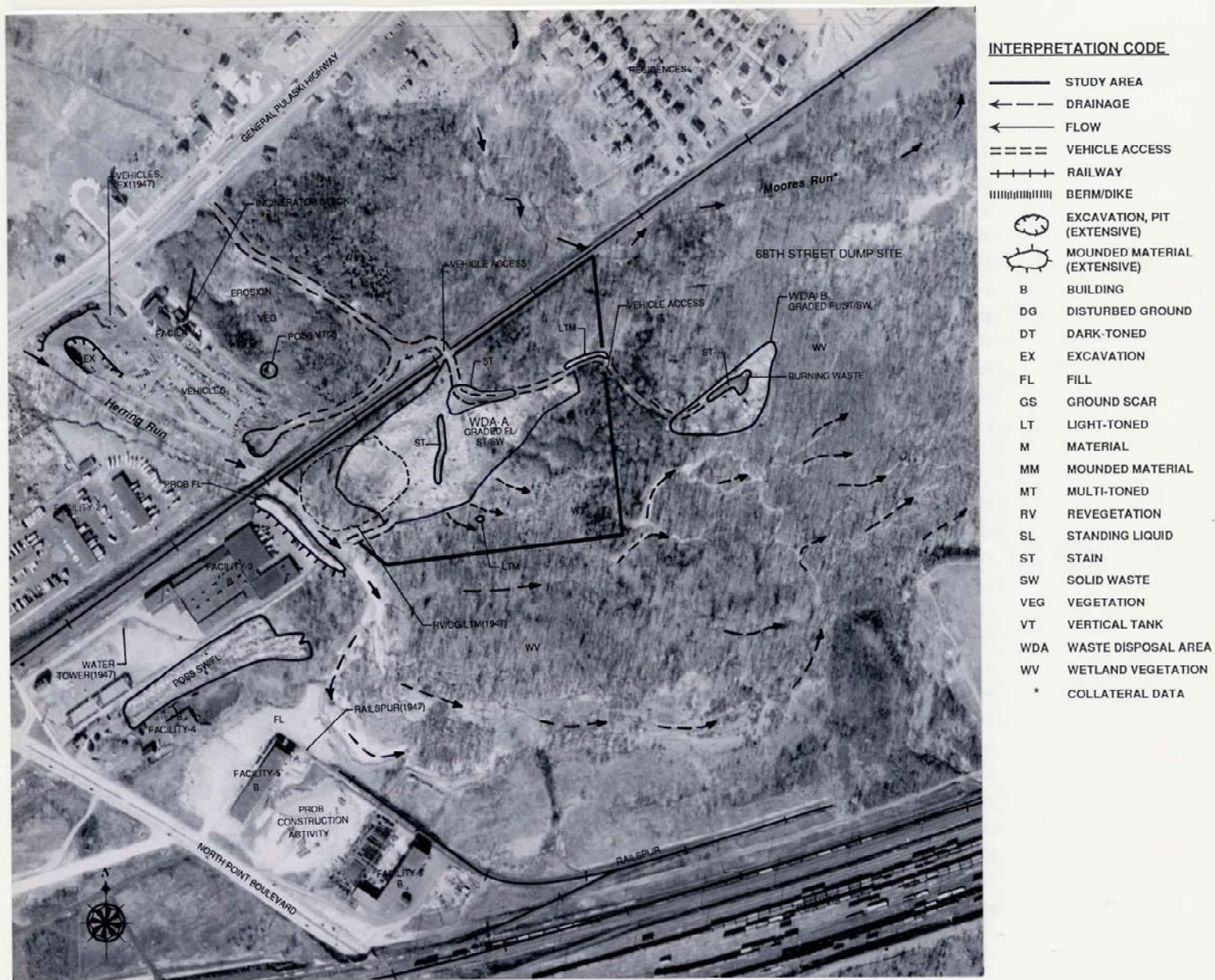


Figure 5. Colgate Pay Dump site, February 14, 1953. Approximate scale 1:4,780.

SEPTEMBER 25, 1957 (FIGURE 6)

Extensive accumulations of graded fill with staining, scattered solid waste, and multiple areas of standing liquids are present at both waste disposal areas (WDA-A and WDA-B). A dashed line represents the former extent of the on-site waste disposal area WDA-A (1953). The northwestern portion of waste disposal area WDA-A now has the appearance of revegetated disturbed ground (not annotated) with multiple areas of standing liquids in a variety of tones. The southwestern portion of waste disposal area WDA-A has been expanded to the northern bank of Herring Run. Waste disposal area WDA-A remains accessible to vehicular traffic (partially annotated) from both Facility-1 to the north and the 68th Street Dump to the east, where waste disposal area WDA-B has undergone extensive expansion (partially annotated). The northern portion of waste disposal area WDA-B includes an area with signs of erosion trending toward Moores Run and a rectangular, liquid-filled pit.

Expansion of the Facility-1 main building has replaced the incinerator stack observed since 1938. Two incinerator stacks have been installed along the western side of the main building. West of the main building, a depression containing mounds of multi-toned materials (MTMM) is seen at the previous location of an excavation (1953). South of the main building, the two possible vertical tanks (1953) are now identified as an incinerator stack and a probable vertical tank. Further south, a pit is present between an unpaved road and the northern railway. At Facility-3 the probable fill observed in 1953 is covered with vegetation and has become confluent with the embankment that bounds this facility. The solid waste area has been expanded to the east at Facility-4. At Facility-5 vegetation is partially covering the area of probable construction activity. North of the southern railspur, extensive areas of graded, light-toned fill and numerous mounds (MM) extend along both sides of Quad Avenue. These construction features (partially annotated) suggest filling will continue or is only partially complete. A new facility (Facility-7) includes a main building and is also serviced by the railspur. To the far northwest, construction activity is noted along General Pulaski Highway.



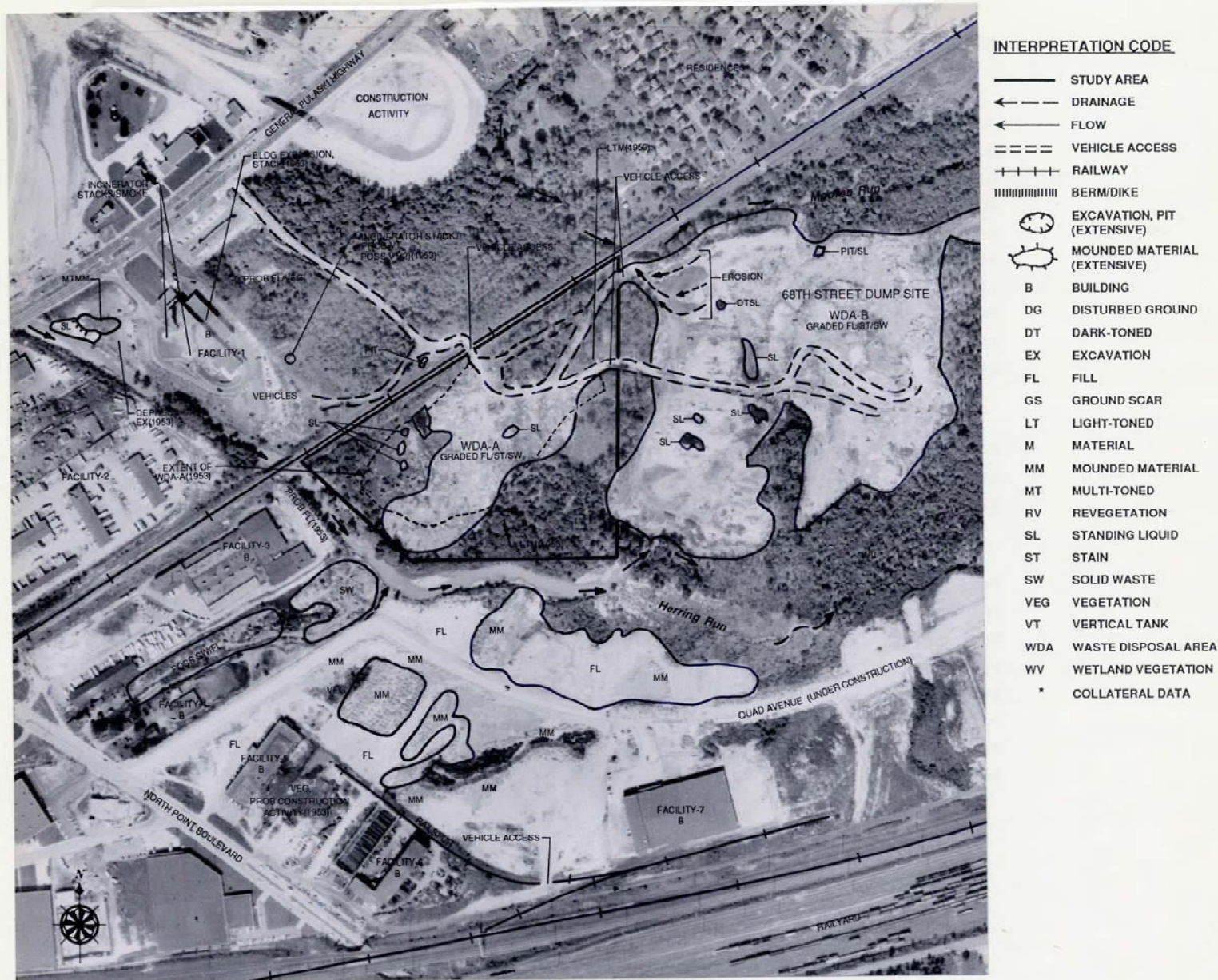


Figure 6. Colgate Pay Dump site, September 25, 1957. Approximate scale 1:4,850.

MAY 18, 1964 (FIGURE 7)

The Colgate Pay Dump site remains accessible to vehicular traffic (partially annotated) from both Facility-1 to the north and the 68th Street Dump to the east. The two waste disposal areas (WDA-A and WDA-B) continue to be comprised of graded, stained, fill material and scattered solid waste. On-site, waste disposal area WDA-A has been expanded to the western, southern, and eastern site boundaries. At waste disposal area WDA-A, surface drainage from an area with standing liquid trends downhill to Herring Run, which has been channelized since 1957, and toward an unpaved vehicle access road. A linear embankment extends along a portion of the western site boundary and the entire southern site boundary. Active dumping of multi-toned solid waste (MTSW) is evident in the southern portion of waste disposal area WDA-A.

Off-site, waste disposal area WDA-B has been expanded to the northern bank of Herring Run, and is approaching the bank of Moores Run; active dumping of multi-toned solid waste is also seen; and includes an irregularly shaped pit with solid waste and multiple areas of standing liquid.

Since 1957 the vegetation in the area northeast of the Facility-1 main building has been removed. At this area, probable excavation activities are ongoing and include an expanse of standing liquid and an area with dark-toned material. Parked vehicles have replaced the mounds of dark-toned materials previously seen west of the main building. At Facility-3, a wall has been installed along the bank of Herring Run. At Facility-4, the solid waste has been removed and a new building has been installed. Construction of Quad Avenue appears to have been completed and vegetative growth is apparent (not annotated) on the fill areas along both sides of this roadway.



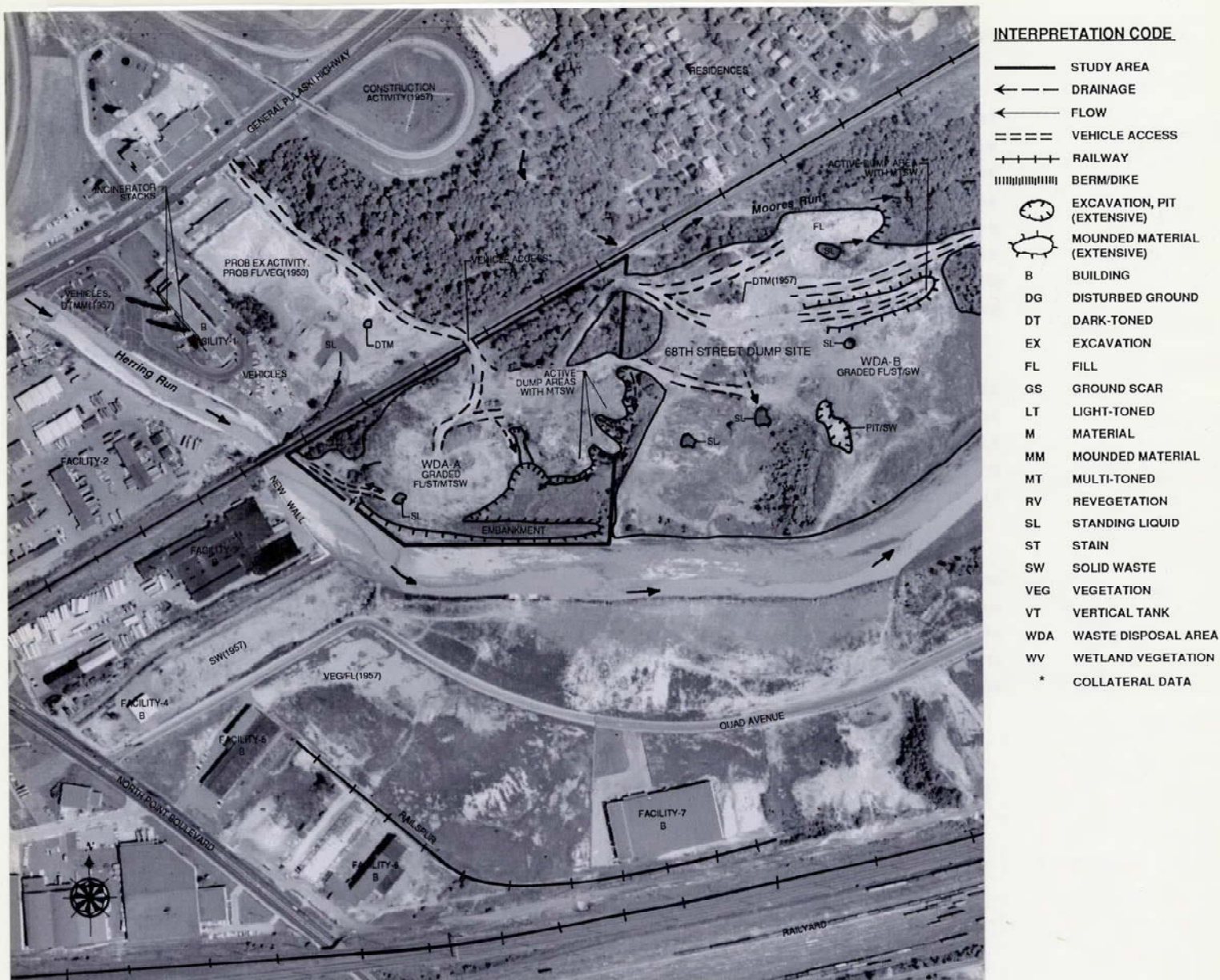


Figure 7. Colgate Pay Dump site, May 18, 1964. Approximate scale 1:4,750.

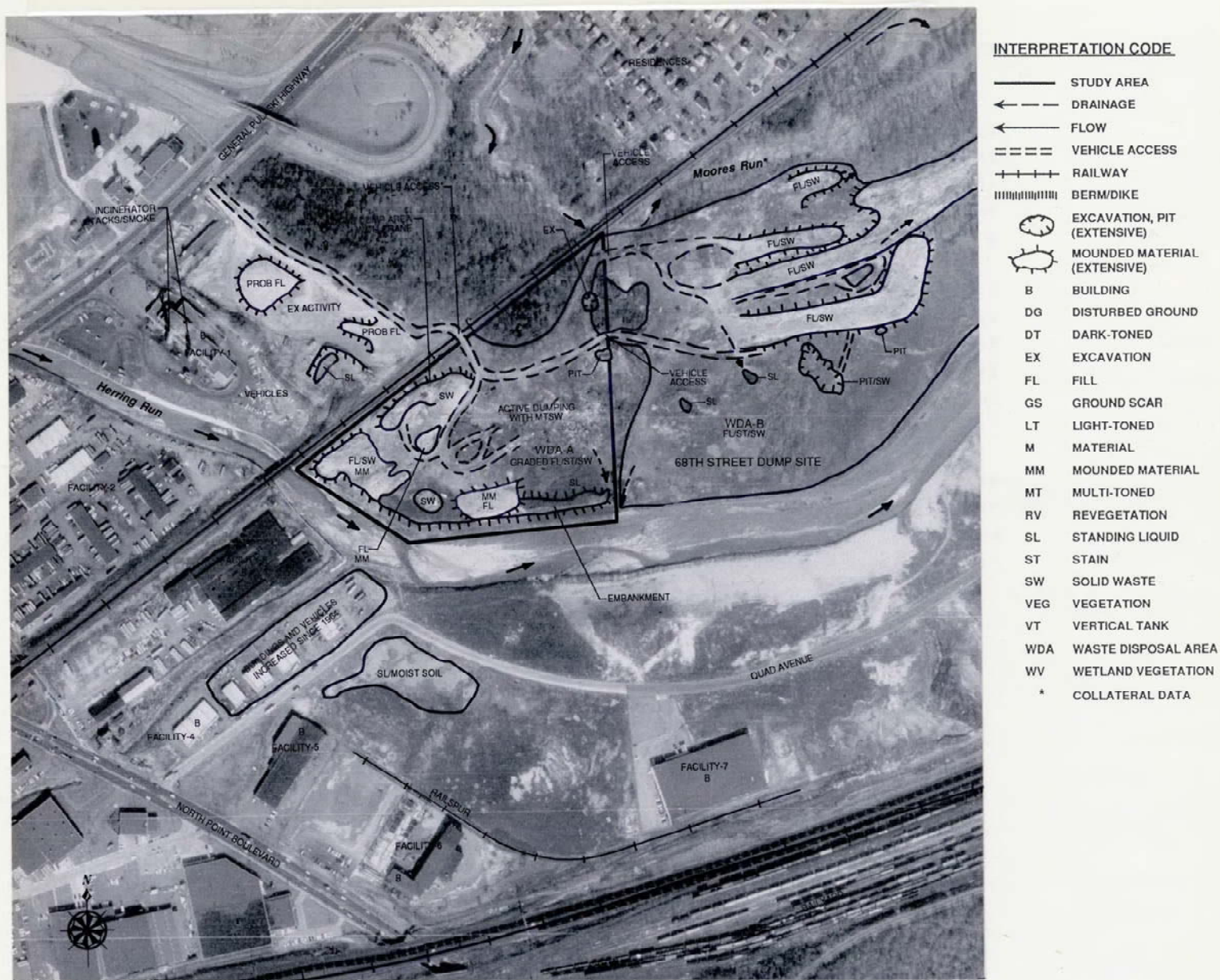


FEBRUARY 21, 1966 (FIGURE 8)

Since 1964 both waste disposal areas (WDA-A and WDA-B) have been expanded in areal extent. On-site at waste disposal area WDA-A, an active dumping area with a crane (not individually annotated); areas with fill material and solid waste (spread-out and mounded); standing liquid; a pit; and a circular excavation are present. Active dumping of multi-toned solid waste remains evident in the southeastern portion of waste disposal area WDA-A. Along the eastern boundary of the Colgate Pay Dump site, the two waste disposal areas are difficult to differentiate due to the spreading of the solid waste and fill material.

Off-site at waste disposal area WDA-B, areas with standing liquid and the irregularly shaped pit with solid waste are still present. Since 1964 mounds comprised of fill material and solid waste have been established north of the irregularly shaped pit. Vehicle access extends from the irregularly shaped pit to the southernmost mound. To the east, a smaller pit is present alongside this mound.

At Facility-1 smoke emissions are visible from the two incinerator stacks. East of the main building, excavation activities continue and there are two extensive mounds of probable fill material. A berm partially impounds the standing liquid. At Facility-4 the number of buildings and vehicles has increased (not individually annotated). An area with standing liquid and moist soil is present between Quad Avenue and Facility-5.



MARCH 5, 1969 (FIGURE 9)

On-site, active dump areas are evident in the southeastern and eastern portions of waste disposal area WDA-A. Due to the increased height of the materials in waste disposal area WDA-A, the embankment feature observed since 1964 now appears terraced. Waste disposal area WDA-A has been expanded to all boundaries of the site and appears to have merged with waste disposal area WDA-B east of the Colgate Pay Dump.

Off-site, the northern boundary of waste disposal area WDA-B extends to the bank of Moores Run, and the southern boundary to the bank of Herring Run. Areas with standing liquid remain visible. Revegetating mounds comprised of fill material and solid waste are also visible. Vehicle access extends from the northernmost mound to the southern bank of Moores Run.

East of the Facility-1 main building, the probable fill area has been expanded. The areal extent of the standing liquid has increased substantially since 1966. An area with standing liquid and moist soil remains present between Quad Avenue and Facility-5. Two new facilities (Facility-8 and Facility-9) are identified on either side of Quad Avenue.



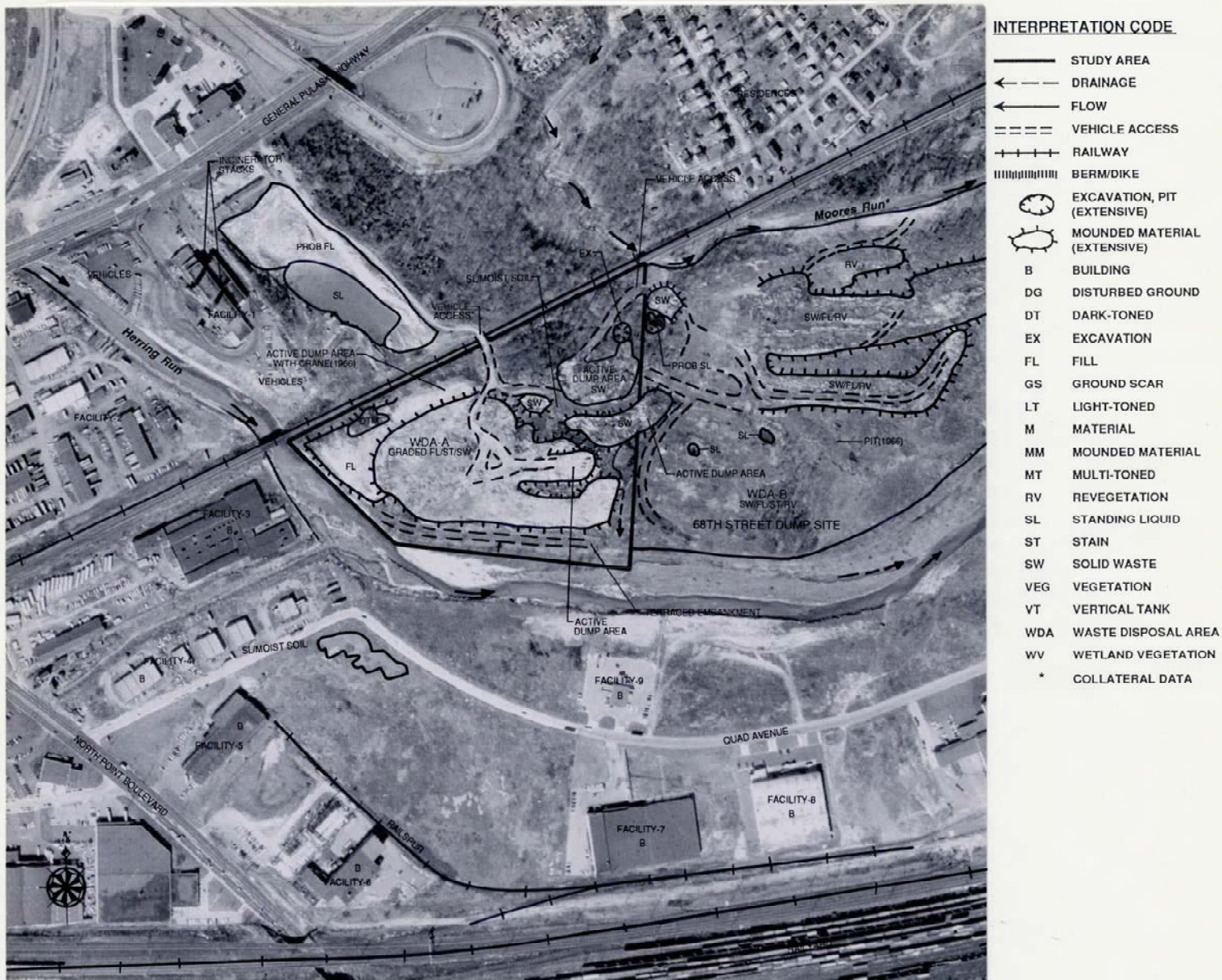


Figure 9. Colgate Pay Dump site, March 5, 1969. Approximate scale 1:4,780.

NOVEMBER 5, 1971 (FIGURE 10)

On-site, waste disposal area WDA-A continues to cover the entire site. The ground surface appears heavily stained and there are areas with standing liquid and mounds of dark-toned materials. Along the southern site boundary, the terraced embankment is now heavily vegetated and a culvert is present. Along the eastern site boundary, waste disposal area WDA-A is not readily distinguishable from waste disposal area WDA-B off-site.

At waste disposal area WDA-B the revegetating mounds comprised of fill material and solid waste remain visible. Areas with standing liquid are not visible in this portion of waste disposal area WDA-B.

At Facility-1 the previously observed standing liquid is not visible. It is possible the area covered by the standing liquid was filled in, since the tone of the fill material in this vicinity was previously light-toned and now appears to be medium-toned. At Facility-9 development has extended to the southern bank of Herring Run and numerous vehicles are present. A new facility (Facility-10) is noted northeast of Facility-5, where standing liquid and moist soil were observed in 1969. To the north along the bank of Herring Run, probable construction activity is observed. Northeast of the site and across the northern railway, construction activity is noted associated with the northern portion of Moores Run.



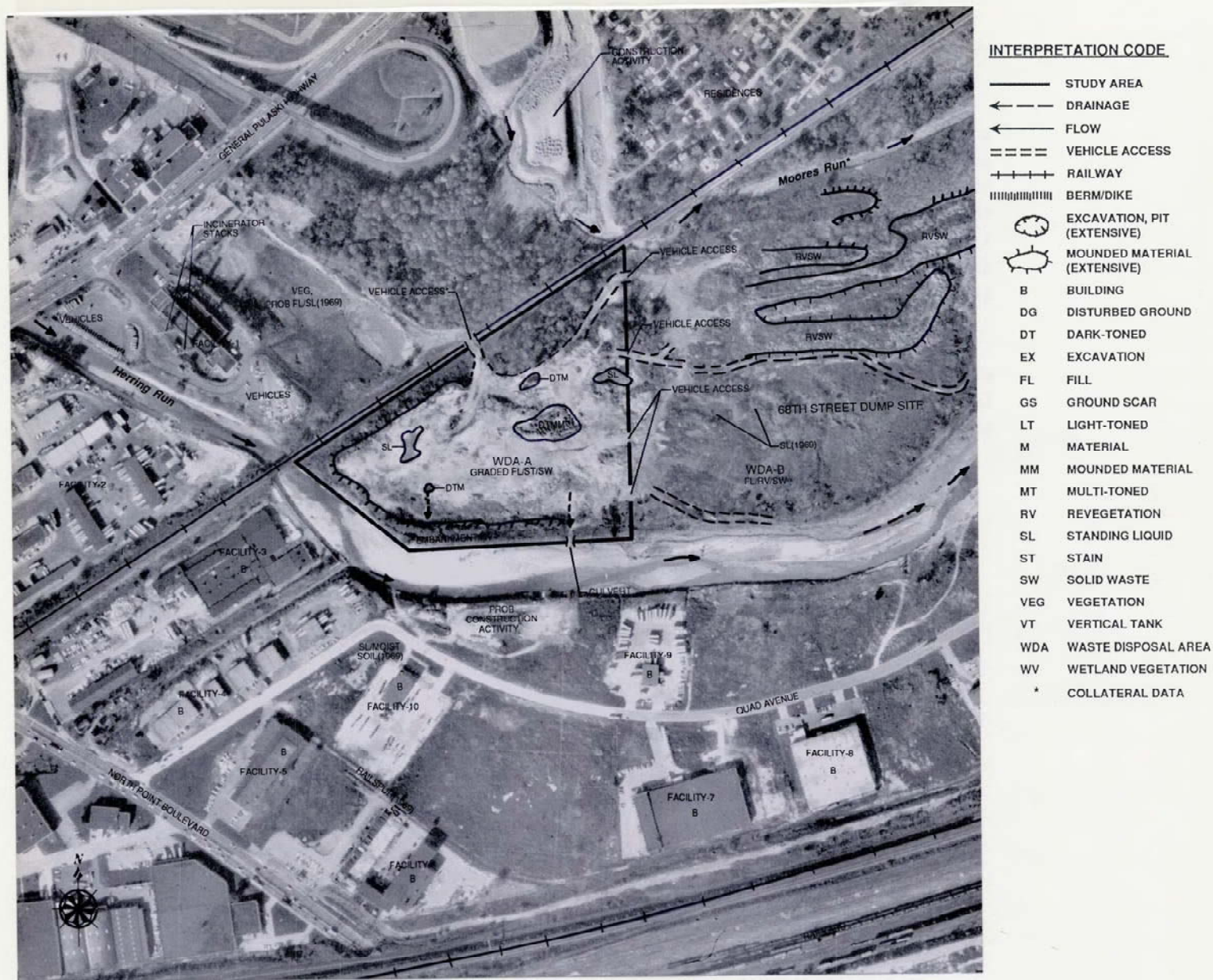


Figure 10. Colgate Pay Dump site, November 5, 1971. Approximate scale 1:4,730.



JUNE 14, 1973 (FIGURE 11)

Activities associated with the construction of Interstate 95 obscure much of the Colgate Pay Dump site, the northeastern portion of Facility-1, and the portion of the 68th Street Dump site identified as waste disposal area WDA-B. Three light-toned areas (FL-1 through FL-3) of probable fill material within the road construction activity area are identified for locational purposes. Light-toned fill material covers much of the ground surface previously utilized as waste disposal areas (WDA-A and WDA-B). An extensive, dark-toned mound (M1) is present in the southwestern portion of the site.

A second, similar mound (M2) is present outside the eastern site boundary along with a smaller, vegetated mound (M3). An area with standing liquid is located north of mound M2. An area with dark-toned material is located east of mound M3. Probable construction activity is noted at Facility-1.

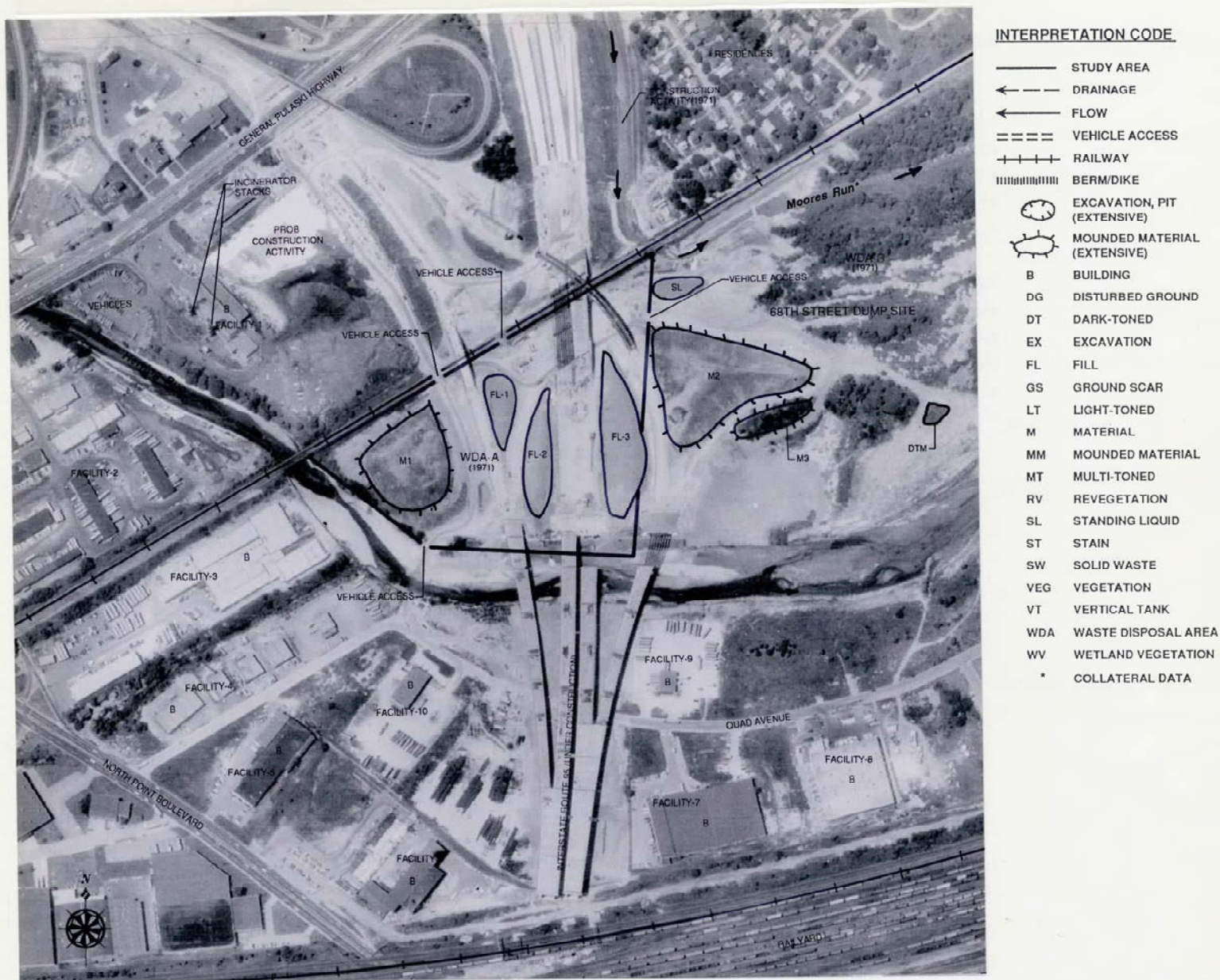


Figure 11. Colgate Pay Dump site, June 14, 1973. Approximate scale 1:4,680.

APRIL 2, 1981 (FIGURE 12)

Since 1973 the construction of Interstate 95 across the site has been completed. The three light-toned areas (FL-1 through FL-3) of probable fill material have either been consolidated within the road construction activity area (FL-1) or appear excavated (FL-2 and FL-3). Ground scars (GS) are visible along the southern side of mound M1.

Ground scars are also seen on the southern flank of mound M2. Two additional mounds (M4 and M5) are identified south of mound M3. An area with standing liquid remains visible north of mound M2. The area with dark-toned material is no longer present east of mound M3. At Facility-1 vehicles are parked in the area where probable construction activity was noted in 1973, and a probable tank is observed just south of the General Pulaski Highway.



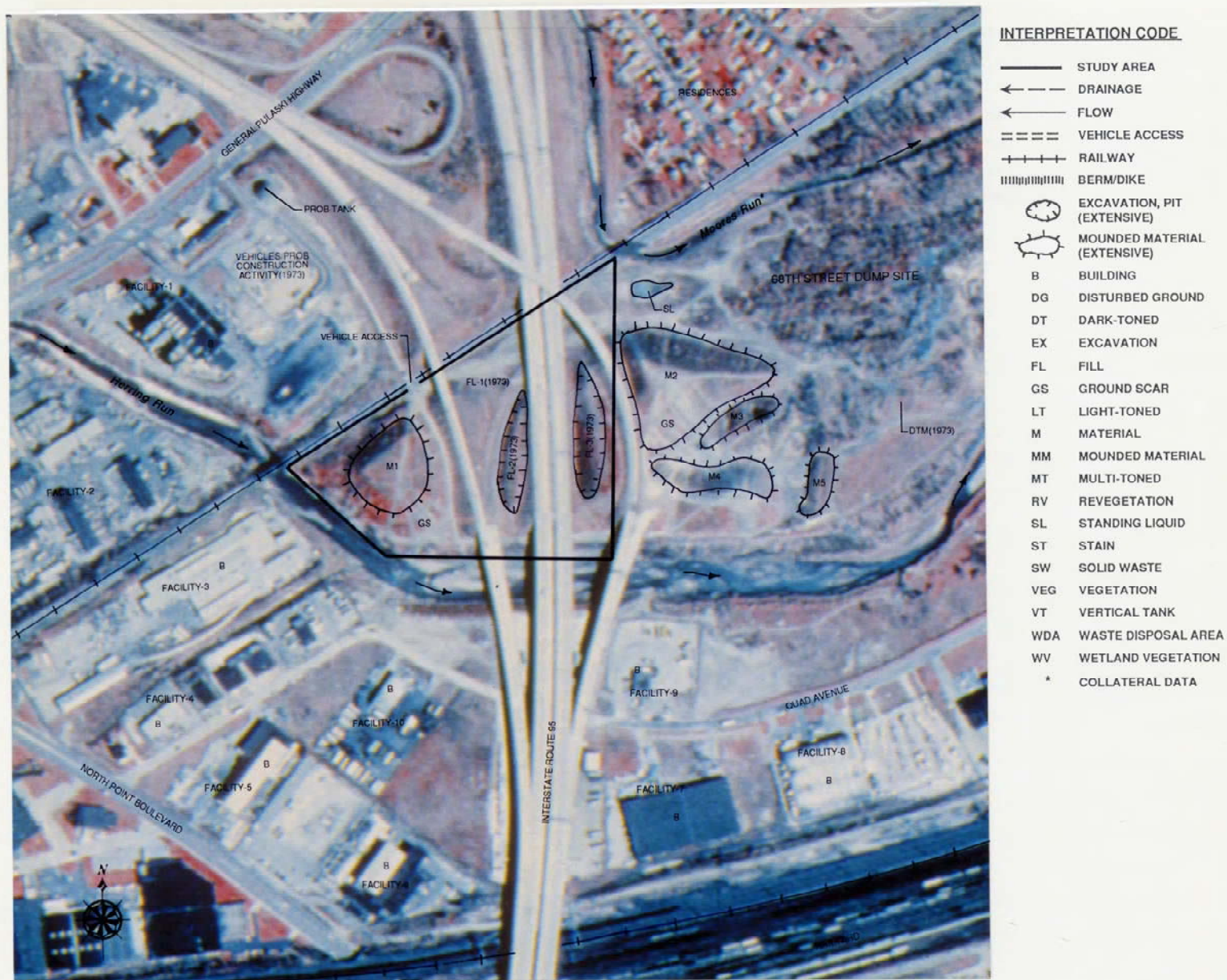


Figure 12. Colgate Pay Dump site, April 2, 1981. Approximate scale 1:4,780.

FEBRUARY 9, 1998 (FIGURE 13)

Since 1981 revegetation has obscured the delineations of mound M1 located on the site. Similarly, the surfaces of the off-site mounds (M2 through M5) have become revegetated. Ground scars remain visible along the southern side of mound M2 and along mound M4. Standing liquid is no longer visible north of mound M2.



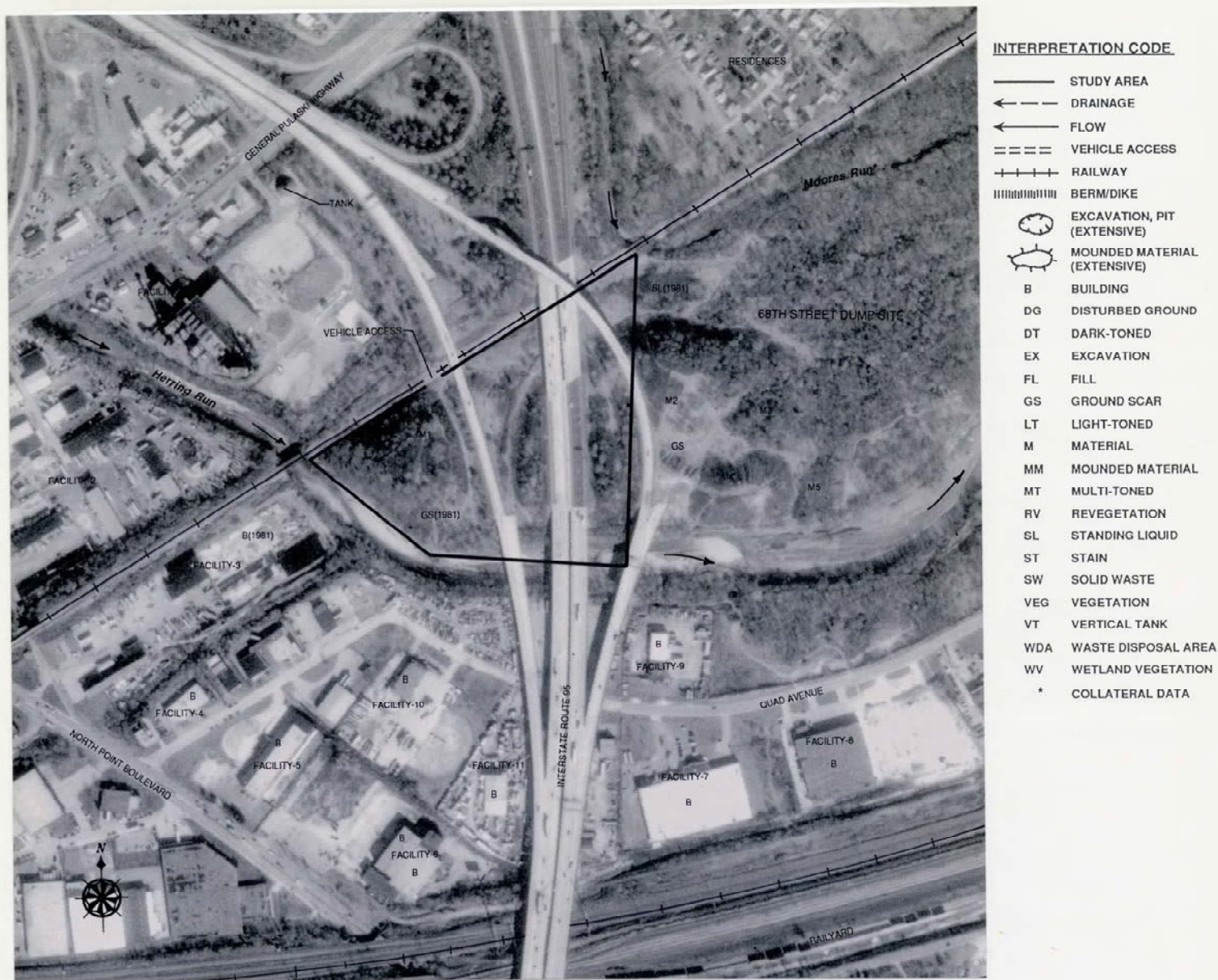


Figure 13. Colgate Pay Dump site, February 9, 1998. Approximate scale 1:4,870.



## GLOSSARY

Access Road - A paved or unpaved route of vehicular access.

Berm/Dike - An embankment of either natural or man-made materials that impounds liquids, solids or other materials, or controls flood waters.

Building (B) - A relatively permanent, essentially boxlike construction having a roof.

Dark-, Multi-, or Light-Toned - Tones of features in question are compared with the darkest and lightest tones of gray (if using B&W photography) on the print.

Disturbed Ground (DG) - A rough area where the ground surface has been dug up or overturned.

Excavation Area (EX) - An area where earth or other material is being removed in order to alter the ground level (e.g., building construction).

Fill (FL) - Earth, stones, or other material that is used to build up the level of an area of ground.

Ground Scar (GS) - An area of bare soil, apparently the result of human activity.

Material (M) - Raw or waste materials on or in the vicinity of the site.

Mounded Material (MM) - Piles of raw or waste materials on or in the vicinity of the site.

Solid Waste (SW) - Any garbage, refuse, or sludge from a waste treatment, water supply treatment plant, or air pollution control facility, and other discarded material, including solid or semi-solid material resulting from industrial, commercial, mining, and agricultural operations, and from community activities; does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges.

Stain (ST) - A residue or discoloration resulting from a spill, discharge, or removed/dispersed materials.

Standing Liquid (SL) - A small, shallow, temporary collection of liquid, not necessarily waste. Not to include liquid contained in impoundments, trenches, pits, etc.

Tanks - Vertical tanks (VT), horizontal tanks (HT), pressure tanks (PT), tank farms, and solid waste management units. A large receptacle, container, or structure for holding liquid or gas.

Waste Disposal Area (WDA) - An area where waste materials are discarded.

Wetlands Vegetation (WV) - Vegetation typically adapted for life in inundated, saturated, or periodically inundated or saturated soil conditions.

## REFERENCES

### MAPS

Source <sup>a</sup>	Figure	Name	Scale	Date
USGS	1	United States	1:2,500,000	1972
USGS	2	Baltimore East, MD	1:24,000	1974

### COLLATERAL INFORMATION

EPA. 1997. Project Number TS-PIC-9703332S. Aerial Photographic Analysis: 68th Street Dump, Baltimore County, Maryland.

EPA. 2000. Project Number TS-PIC-99034102S/20003410S. Aerial Photographic Analysis: Industrial Enterprises Site, Rosedale, Maryland.

EPA. 2000. Site map supplied by EPA Region 3 as attachment to Remote Sensing Services Request Form. 7 pp.

EPA. 2000. Internet address <http://www.epa.gov/oerrpage/superfund/sites/arcsites/reg03/a0300337.htm>.

LMS. 2000. Lockheed Martin Services Master Quality Assurance Project Plan. Prepared for EPA Environmental Sciences Division, Contract 68-D-00-267. Las Vegas, Nevada.

### AERIAL PHOTOGRAPHS

Photo source <sup>a</sup>	Figure <sup>b</sup>	Date of acquisition	Original scale	Film type <sup>c</sup>	Mission I.D.	Source frame #
NARA	3	04-23-38	1:20,000	B&W	AJO-8	143,144
NARA		04-25-43	1:24,000	B&W	DCO-7	144,145
KVT	4	10-21-47	1:20,000	B&W	RG373-ON2012	12,13
KVT		04-16-50	1:10,000	B&W	RG373-ON4203	294-296
ASCS	5	02-14-53	1:20,000	B&W	AJO-8K	146,147
ASCS	6	09-25-57	1:20,000	B&W	AJO-5T	32,33
NOS		08-02-60	1:20,000	BIR	C&GS-L	320,321
ASCS	7	05-18-64	1:20,000	B&W	AJO-1DD	188,189
USGS	8	02-21-66	1:24,000	B&W	GS-VBLA	108-111
AIRPHO		10-00-68	1:24,000	B&W	V-6810	57,8

(Continued)

AERIAL PHOTOGRAPHS (Continued)

Photo source <sup>a</sup>	Figure <sup>b</sup>	Date of acquisition	Original scale	Film type <sup>c</sup>	Mission I.D.	Source frame #
AIRPHO	9	03-05-69	1:24,000	B&W	V-693	31-33
ASCS	10	11-05-71	1:20,000	B&W	AJO-7MM	56,57
AIRPHO	11	06-14-73	1:20,000	B&W	V736	191,192
AIRPHO		10-00-75	1:24,000	B&W	VW-7510	37,38,248
USGS	12	04-02-81	1:58,000	CIR	NHAP80	50-52
EPA		11-03-84	1:24,000	CC	-	3201
ASCS		04-10-88	1:40,000	B&W	NAPP-6	151-154
AIRPHO		05-21-92	1:24,000	B&W	VS925-226-35	68,69
ASC		10-11-94	1:48,000	CC	ASC94-15	10,11
ASCS	13	02-09-98	1:40,000	B&W	NAPP10577	19-22

- <sup>a</sup>AIRPHO Air Photographics, Inc., Martinsburg, Virginia  
 ASC Air Survey Corporation, Sterling, Virginia  
 ASCS U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service, Salt Lake City, Utah  
 EPA U.S. Environmental Protection Agency, Characterization Research Division, Las Vegas, Nevada  
 KVT King Visual Technology, Hyattsville, Maryland  
 NARA National Archives and Records Administration, Washington, D.C.  
 NOS National Ocean Service, Coast and Geodetic Survey, Washington, D.C.  
 USGS U.S. Department of Interior, U.S. Geological Survey, Washington, D.C.  
<sup>b</sup>Photographs listed with no figure number were analyzed but not placed in this report because no significant features or changes had occurred since the previous photographs.  
<sup>c</sup>B&W Black-and-white  
 CC Conventional Color  
 CIR Color Infrared